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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,990	11/26/2003	Junji Mizutani	SAEG154.001AUS	9018
20995 7590 01/10/2007 KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR IRVINE, CA 92614			EXAMINER DRODGE, JOSEPH W	
			ART UNIT	PAPER NUMBER
			1723	
SHORTENED STATUTORY PERIOD OF RESPONSE		NOTIFICATION DATE	DELIVERY MODE	
3 MONTHS		01/10/2007	ELECTRONIC	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 01/10/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com  
eOAPilot@kmob.com

## Office Action Summary

Application No.

10/722,990

Applicant(s)

MIZUTANI ET AL.

Examiner

Joseph W. Drodge

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5, 7-9 and 11 is/are allowed.
- 6) ☒ Claim(s) 6 and 10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

#### ALLOWABLE SUBJECT MATTER

Claims 1-5 and 9 remain distinguished over all of the prior art.

Independent claim 1, and claims dependent, therefrom distinguish over the prior art of record in view of recitation of a method of hydrofluoric (HF) acid wastewater treatment in which a hydrofluoric acid concentration and evaporation step, producing a vapor, precedes a neutralization step in which residual hydrofluoric acid-containing vapor, which had not been dissolved in an intermediate dissolution step is neutralized with an alkali to produce neutralized liquid and dehydrofluorinated vapor, and additionally condensing dehydrofluorinated vapor obtained in the neutralization step to produce condensed water.

Claims 1-4 thus define over each of the Japanese patent publications of record with the 0304 and 1104 Information Disclosure Statements, a neutralization step with alkali to treat HF acid-containing wastewater was followed by a downstream, subsequent concentration/evaporation step. Similarly, in Kurokawa et al patent 6,379,548, in a system and method for treating waste water containing HF acid, a step for neutralizing the effluent with alkali precedes a concentration/evaporation step (or steps), in combination with other process steps including biological treatment and ion exchange treatment. Chlanda et al patent 3,787,304 of record and newly cited Srinivasan et al patent 4,599,156, although each teaching to concentrate HF acid by evaporation, followed by dissolution and neutralization steps, do not teach a condensation step following the neutralization step, especially for condensed dehydrofluorinated vapor from the neutralization step.

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Claim 5 similarly distinguishes in view of recitation of separating concentrated and neutralized liquid into HF acid-containing water, alkali-containing water and desalted water using ion exchange membranes.

Apparatus claims 7-9 and 11 are now deemed allowable and distinguished over the prior art.

Apparatus claim 9 distinguishes in view of a separator for separating neutralized liquid from the 2<sup>nd</sup> concentrator into 3 separate fractions; HF acid-containing water, alkali-containing water and desalted water.

Claims 7 and 8 distinguish for the same reason as claim 9 concerning apparatus configured for producing of 3 fractions of water from the neutralized liquid using ion exchange membranes.

Claim 11 also distinguishes in view of recitation of a return line operable for returning HF acid-containing vapor solution from water contactor to HF acid concentrator. In Chlanda, such vapor solution is returned to a condenser downstream of the concentrator.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 6 and 10 are/remain rejected under 35 U.S.C. 102(b) as being anticipated by Chlanda et al patent 3,787,304.

Chlanda et al disclose HF concentrator/evaporator (column 2, lines 29-33 concerning digester and evaporator of a phosphate plant), 'water' contactor 3 (column 4, lines 63-67 states that water is added to settler/contactor 3), 'alkali' contactor 4 (column 2, lines 47-53 stating that a potassium fluosilicate slurry is reacted, i.e. neutralized, with alkali material of potassium hydroxide), and downstream "'still" 18, stills being apparatus in which substances are heated to a gaseous state and then condensed, the effluent or outlet stream from alkali contactor 4 in fluid communication with downstream still or condenser 18, via intermediate electrodialysis unit and water-splitting unit stages 5 and 10-14. Streams, hence conduits of lines 21,22 and 24 and also lines 28 and 31 constitute "vapor supply lines" for supplying liquids and/or vapors from upstream evaporator towards the water and alkali contactors (again see column 2, lines 29-33).

Regarding claim 6, lines 28 and 31 connect the water contactor and alkali contactor.

Regarding claim 10, alkali contactor 4 is configured to receive water and entrained vapor originating in water contactor 3 via lines 28 and 31 to mix with alkali (potassium hydroxide) and other added material that is added through line 34.

Recitation of production of condensed water remains deemed functional intended use language and of little patentable weight. As necessary, for claims 6 and 10, constituents of the contactors and other fluid-handling components do not necessarily have critical patentable weight, since these components are capable of handling varied fluids, vapors and liquid mixtures.

Applicant's arguments filed on November 6, 2006, concerning Chlanda, have been fully considered but they are not persuasive.

With regard to claims 6 and 10, it is argued that streams 28 and 31 of Chlanda that connect contactors or "mixer-settlers" 3 and 4 pass slurry therethrough instead of hydrofluoric-acid containing vapors including vapors that have not been dissolved, thus are structurally different from what is claimed. With regard to claim 10, it is further argued that the Chlanda system does not bring received vapor into contact with an alkali to produce a neutralized liquid and a dehydrofluorinated vapor. However, it is submitted that terminology "streams" of Chlanda inherently requires conduits or lines which are capable of passing any of a wide-range of liquids and/or vapors that may have dissolved or not dissolved. The mixer-settlers or contactors of Chlanda are also capable of handling generally any liquid and/or vapor. What is argued constitutes functional considerations and/or method steps rather than positively recited structure.

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At most, the arguments require structural details that are not recited or structure that is upstream of the instantly claimed structure.

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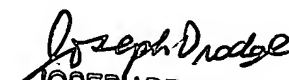
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Drodge at telephone number 571-272-1140. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can be reached at 571-272-1151. The fax phone number for the examining group where this application is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either private PAIR or Public PAIR, and through Private PAIR only for unpublished applications. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JWD

January 3, 2007

  
JOSEPH DRODGE  
PRIMARY EXAMINER